

REMARKS

Applicants have carefully reviewed and considered the Examiner's Action mailed August 11, 2006. Reconsideration is respectfully requested in view of the foregoing amendments and the comments set forth below.

By this Amendment, claim 23 is amended. Accordingly, claims 23-31 are pending in the present application.

Claims 23-31 were rejected under 35 U.S.C. §112, first paragraph as based on a disclosure which is not enabling for the reasons set forth in paragraph 2 spanning pages 2-4 of the Action. By the foregoing amendments to claim 23, claim 23 is clarified to recite that “the molecules [of the variable refractive index material] are varied in accordance with the amplitude of an applied AC voltage”. The Substitute Specification provides support for the molecules being varied in accordance with the amplitude of an applied AC voltage at page 7, lines 18-22; page 27, lines 4-7; and page 37, lines 21-23.

The Action refers to a passage in the Substitute Specification (page 23, lines 9-20), which states that “the refractive index of the dual-frequency liquid crystal can be varied in a substantially binary manner” in a specific example of the driving frequency dependency. The other passage, page 28, lines 1-22 of the Substitute Specification, is directed to a specific embodiment as well. Page 27, lines 4-7 of the Substitute Specification state “it [is] possible to further increase the variation in the liquid crystal alignment condition by increasing the **amplitude** of the applied voltage.” (emphasis added) Thus, the specification enables a claim where the molecules are varied in accordance with the amplitude of an applied AC voltage.

Independent claim 23 is amended to also recite how driving frequencies are

utilized in order to effect changes in the variable refractive index (claim 23, lines 8-10). Figure 7 shows the relationship between the dielectric constant of the liquid crystal of Figure 6 and the frequency of the driving voltage (Page 13, lines 9-10 of the Substitute Specification). For example, page 24, lines 17-19 of the Substitute Specification describe that AC voltage is applied periodically between frequencies f_{l1} and f_{l2} for a given period of time to achieve balance. As shown in Figure 7, the dielectric constant is positive at low frequencies (e.g., frequencies less than 1.0 kHz) and the dielectric constant is negative at frequencies greater than 1.0 kHz, for example. Figure 7 combined with page 36, line 21 to page 38, line 2 of the Substitute Specification disclose the last paragraph of claim 23 and one of ordinary skill in the art reading that disclosure would have understood that how to make and use the claimed invention. That is, claim 23 does disclose controlling the variable refractive index through driving frequencies contrary to the Examiner's position set forth at the top of page 4 of the Action.

In view of the above, it is believed that the disclosure enables the claimed invention and withdrawal of the rejection under 35 U.S.C. §112, first paragraph is respectfully requested. However, it should be noted that claim 23 is not inclined to depend upon "variations of frequency" of the dielectric constant anisotropy as set forth in original claim 1.

Claims 23-31 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for the reasons set forth in paragraph 4 of the Action. As explained above, "it [is] possible to further increase the variation in the liquid crystal alignment condition by increasing the **amplitude** of the applied voltage." (Page 27, lines 4-7 of the Substitute Specification - emphasis added.) Claim 23 recites that the longer axes of the molecules


are aligned [parallel] with the electric field when applying a larger amplitude of the AC voltage according to the positive dielectric constant ($\Delta\epsilon > 0$) and the longer axes of the molecules are aligned perpendicularly to the electric field when applying a smaller amplitude of the AC voltage according to the negative constant anisotropy ($\Delta\epsilon < 0$). That is, one amplitude provides a parallel alignment while the other provides a perpendicular alignment. For the foregoing reasons, it is believed that claim 23 is fully definite under 35 U.S.C. §112, second paragraph and withdrawal of that rejection is respectfully requested.

There is no prior art rejection. It is submitted that the claims are enabled and fully definite under 35 U.S.C. §112, first and second paragraphs and thus the claims are allowable over the prior art of record and are in condition for allowance. Therefore, it is respectfully submitted that this Amendment After Final Rejection places the application in condition for allowance; does not raise new issues that require further consideration and/or search; and do not raise the issue of new matter. Accordingly, Applicants respectfully request that this Amendment After Final Rejection be entered and that this application be passed to issuance.

Should the Examiner believe that a conference would be of value in expediting the prosecution of the application, Applicants request that the Examiner telephone the undersigned counsel, if necessary.

Respectfully submitted,

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